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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,422	01/10/2002	Kazumitsu Nakatsuka	217962US0PCT	5990
22850	7590	05/03/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			DI NOLA BARON, LILIANA	
			ART UNIT	PAPER NUMBER
			1615	

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/030,422	NAKATSUKA, KAZUMITSU	
	<b>Examiner</b>	<b>Art Unit</b>	
	Liliana Di Nola-Baron	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 7-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-10 and 15-21 is/are rejected.
- 7) ☒ Claim(s) 11-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

Receipt of Applicant's amendment and declaration, filed on February 12, 2004, is acknowledged.

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 112***

2. Claim 20 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant's amendment, introducing new claim 20 directed to a tertiary aliphatic amine, which is not (2-dimethylamino)ethyl methacrylate, represents a departure from the specification and the claims as originally filed, and Applicant has not pointed out where the support for said amendment comes from. See in particular page 18 of Applicant's specification, where (2-dimethylamino)ethyl methacrylate is listed as one of the preferred tertiary amines used in the invention.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 7-10 and 15-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Imazato et al. (U.S. Patent 5,733,949).

The patent to Imazato et al. provides an antimicrobial dental composition comprising an antimicrobial polymerizable monomer, a polymerizable monomer having acidic group, a polymerizable monomer having alcoholic hydroxy group, water and a polymerization catalyst (See col. 2, lines 27-34) and teaches that the composition may be mixed with dental acrylic adhesive comprising polymerizable monomer of acrylic base and polymerization initiator (See col. 6, line 66 to col. 7, line 27).

With respect to the antibacterial salt compound (a) claimed in claim 7 of the instant application and further defined as antibacterial pyridinium salt compound in claim 8, and having polymerizable group in claims 9 and 10 of the application, the patent discloses 12-methacryloxydodecylpyridiniumbromide (MDPB) having the chemical structure shown in Formula 4 as the antimicrobial polymerizable monomer used in the invention (See Examples 1-24 and claim 5 in the patent). MDPB is an antibacterial polymerizable pyridinium salt compound, as claimed by Applicant.

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With regard to the polymerizable monomer having acidic group (b) claimed in claim 7 of the instant application, the patent discloses polymerizable monomers having acidic group, such as phosphoric acid, carboxylic acid or sulfonic acid group, and includes methacryloyloxydecyl dihydrogen phosphate (MDP) among said polymerizable monomers (See col. 5, lines 20-60 and Examples 5-12).

With respect to the hydrophilic polymerizable monomer (c) claimed in claim 7 of the instant application, the patent discloses polymerizable monomers having alcoholic hydroxy group, and includes 2-hydroxyethyl methacrylate (HEMA) among said monomers (See col. 5, line 61 to col. 6, line 11 and Examples 1-8). The polymerizable monomers having alcoholic hydroxy group disclosed by the patent, and specifically HEMA, are hydrophilic polymerizable monomers, as claimed by Applicant.

With respect to the water (d) claimed in claim 7 of the instant application, the patent provides water substantially free of impurities in the composition of the invention (See col. 6, lines 12-21).

With regard to the basic compound (e) claimed in claim 7 of the instant application and further defined as an aliphatic amine in claims 15-20 of the application, the patent includes aromatic secondary or tertiary amines among the polymerization initiators, which are used in the compositions of the invention (See col. 6, line 66 to col. 7, line 27).

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With respect to the polymerization initiator claimed in claim 21 of the instant application, the patent provides polymerization catalysts and initiators, including organic peroxides and camphorquinone (See col. 6, lines 24-43 and col. 7, lines 17-27).

The compositions disclosed by Imazato et al. meet the limitations of claims 7-10 and 15-21 of the instant application, as the patent contemplates antibacterial compositions comprising an antibacterial salt compound, a polymerizable monomer having acidic group, a hydrophilic polymerizable monomer, water and a basic compound. Thus, the patent anticipates the claimed invention.

#### ***Allowable Subject Matter***

5. Claims 11-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

6. Applicant's arguments and declaration filed on February 12, 2004 have been fully considered but they are not persuasive.

7. Applicant argues that the prior art does not disclose that DMAEMA is useful for improving the antibacterial property and storage stability of the composition. In response to said argument, it is noted that Imazato et al. discloses DMAEMA as a basic compound, and

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specifically an aliphatic tertiary amine having polymerizable groups, as claimed by Applicant.

The properties argued by Applicant are inherent to the compound disclosed by the prior art.

8. In response to Applicant's argument, that DMAEMA is not used in the examples of the prior art, it is noted that the examples are the inventor's best mode. It is not necessary for the prior art to provide the specific compound in the examples, as long as the prior art provides the teachings that said compound can be present in the compositions of the invention.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liliana Di Nola-Baron whose telephone number is 571-272-0592. The examiner can normally be reached on Monday through Thursday, 8:30AM-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Sh83*

April 27, 2004

*Thurman K. Page*  
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